



**PRELIMINARY DETERMINATION
ON PERMIT APPLICATION**

Date of Mailing: December 18, 2012

Name of Applicant: U.S. Minerals Inc.

Source: Slag Screening Plant

Proposed Action: The Department of Environmental Quality (Department) proposes to issue a permit, with conditions, to the above-named applicant. The application was assigned Permit Application #4834-00.

Proposed Conditions: See attached.

Public Comment: Any member of the public desiring to comment must submit such comments in writing to the Air Resources Management Bureau (Bureau) of the Department at the above address. Comments may address the Department's analysis and determination, or the information submitted in the application. In order to be considered, comments on this Preliminary Determination are due by January 2, 2013. Copies of the application and the Department's analysis may be inspected at the Bureau's office in Helena. For more information, you may contact the Department.

Departmental Action: The Department intends to make a decision on the application after expiration of the Public Comment period described above. A copy of the decision may be obtained at the above address. The permit shall become final on the date stated in the Department's Decision on this permit, unless an appeal is filed with the Board of Environmental Review (Board).

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed by the date stated in the Department's Decision on this permit. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, MT 59620.

For the Department,

Julie Merkel
Air Permitting Supervisor
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JM:CPH
Enclosure

MONTANA AIR QUALITY PERMIT

Issued To:	U.S. Minerals Inc. 2105 North Winds Drive Dyer, IN 46311	Montana Air Quality Permit #4834-00 Application Complete: November 14, 2012 Preliminary Decision: December 18, 2012 Department Decision Issued: Permit Final: AFS #: 777-4834
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A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to U.S. Minerals Inc. (USM) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

MAQP #4834-00 allows the operation of a single Environmental Protection Agency (EPA) rated Tier 3 diesel-fired generator up to a maximum engine output rating of 685 horsepower (hp), a feed hopper with integral grizzly screen, a single rotary dryer, material sizing process including a total of three screens, and material handling including two quality control screens and approximately 17 conveyors. The process also includes a total of two hoppers (including the feed hopper), two elevators, and four silos. A baghouse is also used to control the majority of particulate matter (PM) from the rotary dryer and material sizing process.

B. Plant Location

USM operates a slag screening and drying facility located in Township 4 North, Range 11 West in Section 12 in Deer Lodge County, Montana. MAQP #4834-00 applies while operating at any location in Montana, except those areas having a Department of Environmental Quality (Department) approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.* An addendum will be required for locations in or within 10 km of certain PM₁₀ nonattainment areas. A summary of equipment used in developing the emission inventory is contained in Section I.A. of the Permit Analysis to MAQP # 4834-00.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. All visible emissions from any Standards of Performance for New Stationary Source (NSPS)-affected equipment, other than a crusher (such as screens or conveyor transfers), shall not exhibit an opacity in excess of the following averaged over 6 consecutive minutes (ARM 17.8.340 and 40 Code of Federal Regulations (CFR) 60, Subpart OOO).
 - For equipment that commences construction, modification, or reconstruction on or after April 22, 2008: 7% opacity

- For equipment that commences construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008: 10% opacity
2. All visible emissions from any non-NSPS affected equipment shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
 3. Process enclosures for Material Handling and venting to the baghouse for the Material Sizing Process shall be in used to maintain compliance with the opacity limitations in Sections II.A.1 and II.A.2 (ARM 17.8.752).
 4. USM shall not cause or authorize to be discharged into the atmosphere from any street, road, or parking lot any visible fugitive emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.308 and ARM 17.8.752).
 5. USM shall treat all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.749).
 6. USM shall not operate any of the screens, conveyors, etc. at more than 60 tons per hour (TPH) each (ARM 17.8.749).
 7. The total hours of the facility operation under this permit shall be limited to 6,000 hours of operation during any rolling 12-month time period excluding the diesel-fired generator which may be operated without an annual hourly restriction (ARM 17.8.749).
 8. USM shall not produce more than 360,000 tons of finished product during any rolling 12-month time period (ARM 17.8.749).
 9. USM shall not use more than 1,752,000 gallons of #2 fuel oil to fire the rotary dryer during any rolling 12-month time period (ARM 17.8.749).
 10. USM shall not operate more than one diesel-fired engine driving an electrical generator (or directly driving screens, elevators, etc.) at any given time and the maximum rated design capacity shall not exceed 685 hp as determined by the rated size of the engine (ARM 17.8.749).
 11. If the permitted equipment is used in conjunction with any other equipment owned or operated by USM, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons during any rolling 12-month period. Any calculations used to establish production levels shall be approved by the Department (ARM 17.8.749).
 12. USM shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart III; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

13. USM shall utilize ultra-low sulfur diesel fuel as BACT for sulfur dioxide for the diesel-fired engine (ARM 17.8.749).

B. Testing Requirements

1. Within 60 days after achieving maximum production, but no later than 180 days after initial start-up, an EPA Method 9 opacity test and/or other methods and procedures, as specified in 40 CFR 60.675 must be performed on all NSPS affected equipment to demonstrate compliance with the emission limitations contained in Section II.A.1 (ARM 17.8.340 and 40 CFR 60, Subpart A).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. If this screening plant is moved to another location, an Intent to Transfer Form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).
2. USM shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but not be limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

3. USM shall notify the Department of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start-up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
4. USM shall maintain on-site records showing daily hours of operation and daily production rates for the last 12 months. The records compiled in accordance with this permit shall be maintained by USM as a permanent business record for at least 5 years following the date of the measurement, must be available for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

5. USM shall document, by month, the tons of finished product produced. By the 25th of each month, USM shall calculate the tons of finished product produced. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.8. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
6. USM shall document, by month, the gallons of #2 fuel oil used to fire the rotary dryer. By the 25th of each month, USM shall calculate the gallons of #2 fuel oil used for the rotary dryer for the previous month. The monthly information will be used to demonstrate compliance with the rolling 12-month limitation in Section II.A.9. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

D. Notification

USM shall provide the Department with written notification of the actual start-up date of the facility postmarked within 15 days after the actual start-up date (ARM 17.8.749).

SECTION III: General Conditions

- A. Inspection – USM shall allow the Department’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS)), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if USM fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving USM of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided for in ARM 17.8.740, *et seq.* (ARM 17.8.756).
- D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department’s decision on the application is final 16 days after the Department’s decision is made.

- F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.
- G. Permit Fee - Pursuant to Section 75-2-220, MCA, failure to pay of the annual operation fee by USM may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit - Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).
- I. The Department may modify the conditions of this permit based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, etc.
- J. USM shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas that have a Department-approved permitting program or areas considered tribal lands.

MONTANA AIR QUALITY PERMIT (MAQP) ANALYSIS
U.S. Minerals, Inc.
MAQP #4834-00

I. Introduction/Process Description

A. Permitted Equipment

MAQP #4834-00 allows the operation of a single Environmental Protection Agency (EPA) Tier 3 diesel-fired generator up to a maximum engine output rating of 685 horsepower (hp), feed hopper with non-vibrating grizzly screen, a single rotary dryer, material sizing process including a total of three screens, and material handling including two quality control screens and approximately 17 conveyors. The process also includes two hoppers (including the feed hopper), two elevators, and four silos. A baghouse is used to control the particulate matter (PM) from the rotary dryer and material sizing process. A limit was taken on total facility operating hours to keep the total oxides of nitrogen (NO_x) emissions below the modeling threshold. The main permitted equipment is listed below:

Diesel-fired Generator with associated engine rating of up to 685 hp
Total of six screens
Rotary Dryer
Four Silos
Two Hoppers including feed hopper
Elevators and conveyors

B. Source Description

U.S. Minerals Inc. (USM) proposes to use this screening plant and associated equipment to screen copper slag material for use in various products including roofing granules and abrasives. For a typical operational setup, materials are excavated and transferred using front end loaders to a feed hopper equipped with a grizzly screen to prevent large material from entering the hopper. Oversized material is transferred via front-end loaders to an oversized waste pile. The feed hopper will supply slag to a scalping screen further removing oversized material with the pass-through material going directly into the rotary dryer. Material exiting the rotary dryer is further screened for size and conveyed into holding silos where later it can be loaded into either railcars or trucks.

USM's initial location is the home pit and is located at 47.1208 latitude and -112.9088 longitude. The township, range, section description is Township 4 North, Range 11 West in Section 12 in Deer Lodge County, Montana.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

USM shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Quality Monitoring
2. ARM 17.8.210 Ambient Air Quality Standard for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standard for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standard for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

USM must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, USM shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.
4. ARM 17.8.310 Particulate Matter, Industrial Processes. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.
5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this section.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank truck or trailer is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standards of Performance for New Stationary Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). USM is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.
 - a. 40 CFR 60, Subpart A. – General Provisions apply to all equipment of facilities subject to an NSPS Subpart as listed below.
 - b. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Owners and operators of stationary compression ignition internal combustion engines (CI ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, are subject to this subpart. Based on the information submitted to the Department, the diesel engine to be used under MAQP #4834-00 is subject to this subpart. Engines that are added in the future may also be subject to this subpart.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR Part 63, shall comply with the requirements of 40 CFR Part 63, as listed below:
 - a. 40 CFR 63, Subpart A – General Provisions apply to all equipment of facilities subject to a National Emissions Standard for Hazardous Air Pollutants (NESHAP) Subpart as listed below:
 - b. 40 CFR 63, Subpart ZZZZ – NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. A RICE is considered stationary if it remains or will remain at the permitted location for more than 12 months, or a shorter period of time for an engine located at a seasonal source. A seasonal source remains at a single location on a permanent basis (at least 2 years) and operates 3 months or more each year. Based on the information submitted by USM, the RICE equipment to be used under this permit may be subject to this subpart because they operate at an area source of HAP emissions and the engine may remain at the same home pit location for more than 12 consecutive months.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. USM submitted the appropriate application fee for the current permit action.
2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify or use any facility with a potential to emit (PTE) of greater than 25 tons per year (TPY) of any pollutant. USM has a PTE greater than 25 TPY of total particulate matter (PM) and NO_x; therefore, an MAQP is required.
3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit Program.
4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. USM submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. USM submitted an affidavit of publication of public notice for the November 16, 2012, issue of the *Anaconda Leader*, a newspaper of general circulation in the Town of Anaconda in Deer Lodge County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this Permit Analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving USM of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An MAQP shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An MAQP may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
13. ARM 17.8.764 Administrative Amendment to Permit. An MAQP may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an MAQP may be transferred from one location to another if the Department receives a complete notice of intent to transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an MAQP may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:
 - a. PTE > 100 TPY of any pollutant;
 - b. PTE > 10 TPY of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 TPY of PM₁₀ in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #4834-00 for USM, the following conclusions were made:
 - a. The facility's PTE is less than 100 TPY for any pollutant.
 - b. The facility's PTE is less than 10 TPY for any one HAP and less than 25 TPY of all HAPs.
 - c. This source is not located in a serious PM₁₀ nonattainment area.
 - d. This facility is potentially subject to area source provisions of a current National Emissions Standard for Hazardous Air Pollutants (NESHAP) (40 CFR 63, Subpart ZZZZ).
 - e. This facility is potentially subject to current NSPS standards (40 CFR 60, Subpart IIII).
 - f. This source is not a Title IV affected source or a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, the Department has determined that USM will be a minor source of emissions as defined under Title V. While USM has accepted federally-enforceable limits on annual hours of operation which result in reduced potential emissions, the primary function of these limits is to reduce potential emissions to a level that eliminates the need for the facility to quantitatively demonstrate compliance with ambient air quality standards based on Department policy. By taking these federally-enforceable conditions into account when analyzing the PTE, USM is a true minor source with regards to Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, USM will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. USM shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. All visible emissions from the facility are limited to opacity as referenced in Sections II.A.1 and II.A.2 (ARM 17.8.752). In addition, all visible emissions from any other associated equipment are limited to 20% opacity.

Also, USM must take reasonable precautions to limit the fugitive emissions of airborne particulate matter on haul roads, access roads, parking areas, and general plant property. USM shall use water spray bars and/or chemical dust suppressant, as necessary to maintain compliance with the opacity and reasonable precaution limitations as referenced in Section II.A.5 (ARM 17.8.752).

A. Diesel-Fired Generator

Due to the limited amount of emissions produced by the proposed diesel-fired engine used in association with MAQP #4834-00 and the lack of cost effective add-on controls, add-on controls would be cost prohibitive. Therefore, the Department determined that proper operation and maintenance with no add-on controls would constitute BACT for the diesel-fired engine.

In addition, any new diesel-fired engine would likely be required to comply with the federal engine emission limitations including, for example, EPA Tier emission standards for non-road engines (40 CFR Part 1039), NSPS emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII), or National Emissions Standards for Hazardous Air Pollutant Sources for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ). Therefore, the Department has determined that compliance with applicable federal standards and proper operation and maintenance of the engine constitutes BACT for this engine. BACT for SO₂ emissions shall be satisfied by burning only ultra-low sulfur diesel (15 ppm) as referenced in 40 CFR 89. Appropriately rated EPA Tier emission standards rated models also have low particulate, PM₁₀, CO, and VOCs emitted, and it is economically infeasible to require pollution controls on the diesel generator for these additional pollutants. The control options selected have controls and control costs similar to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

B. Rotary Dryer

The existing rotary dryer will be retrofitted to exhaust through a new baghouse which typically will provide a minimum of 99 percent control efficiency. A baghouse capable of achieving 0.025 grains/dry standard cubic foot shall be installed and is consistent with new baghouses being installed on new rotary dryers under 40 CFR 60 Subpart UUU. Baghouse technology represents the top ranked particulate control technology and is considered BACT. Since fabric filter baghouse control of the PM is equivalent to the highest control efficiency, no further analysis is needed.

C. Material Handling and Sizing Process

USM shall also utilize the baghouse for the majority of the material handling and sizing equipment. Traditional BACT would require the use of water spray and also includes the use of enclosures but the USM process requires dry process material and therefore, baghouse technology will be incorporate by USM over and above traditional BACT methods. Baghouse technology represents the top ranked particulate control technology. For those material transfer operations located too far from the baghouse or for those activities with a small quantity of emissions, those operations will utilize enclosures and should provide up to 90 percent particulate control efficiency. Material transfer and screening operations not vented to the baghouse shall utilize enclosures where feasible and those constitute BACT.

D. Fugitive Emissions

USM must take reasonable precautions to limit the fugitive emissions of airborne particulate matter on haul roads, access roads, parking lots, and the general plant area. Reasonable precautions include treating all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant, as necessary. Using water and/or chemical dust suppressant to comply with the reasonable precautions limitation will be considered BACT.

The control options selected contain control equipment and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

Emission Source	Emissions Tons/Year [PTE]						
	PM	PM ₁₀	PM _{2.5}	CO	NO ₂	SO ₂	VOC
Sizing Screens (Total of 4 Including Grizzly)	0.07	0.02	0.03	--	--	--	--
Material Handling Screens (Total of 2)	0.90	0.31	0.06	--	--	--	--
Material Sizing Transfer Conveyor Points	0.01	0.00	0.00	--	--	--	--
Material Handling Transfer Conveyor Points	0.81	0.30	0.12	--	--	--	--
Other Material Transfers	9.00	4.23	1.94	--	--	--	--
Front End Loader Material Handling	8.64	3.96	0.61	--	--	--	--
Rotary Dryer	2.70	2.70	0.79	4.38	17.52	0.19	0.18
Truck Loading	0.04	0.02	--	--	--	--	--
One Diesel Generator	0.86	0.86	0.86	5.29	17.98	0.03	0.53
Unpaved Roadways (Fugitives)	100.99	27.83	2.78	--	--	--	--
TOTAL EMISSIONS >	124.01	40.24	7.20	9.67	35.50	0.22	0.70
a. Emission Inventory reflects enforceable limits on hours of operation CO, carbon monoxide NO _x , oxides of nitrogen PM, particulate matter PM ₁₀ , particulate matter with an aerodynamic diameter of 10 microns or less PM _{2.5} , particulate matter with an aerodynamic diameter of 2.5 microns or less SO ₂ , oxides of sulfur TPY, tons per year VOC, volatile organic compounds							

Material Sizing Screens (Serial Operation and Limited by Rotary Dryer Capacity)

Process Rate: 60 ton/hr # 3 Grizzly is non-vibrating
 Screens=
 Operating Hours 6000 hours/year 360000 tons/year Annual Throughput

PM Emissions: (Screening Uncontrolled)

Emission Factor 0.02500 lbs/ton [AP-42 Table 11.19.2-2 8/04]
 Calculations (0.025 lbs/ton) * (60.00 ton/hour) * (3 screens)= 4.50 lbs/hr
 (4.50 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) = 13.50 TPY
 with 99.5% Baghouse Control Applied 0.0675 TPY

PM₁₀ Emissions:

Emission Factor	0.0087 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0087 lbs/ton) * (60.00 ton/hour) * (3 screens) =		1.57 lbs/hr	
	(1.57 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		4.70 TPY	
	with 99.5% Baghouse Control Applied		0.023 TPY	

PM_{2.5} Emissions:

Emission Factor	0.00348 lbs/ton	[AP-42 Table 11.19.2-2 8/04] (PM _{2.5} /PM ₁₀ =0.4)		
Calculations	(0.00348 lbs/ton) * (60.00 ton/hour) * (3 screens) =		0.84 lbs/hr	
	(0.84 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		2.51 TPY	
	with 99% Baghouse Control Applied		0.02506 TPY	

Screens (Other total of 2)

Process Rate:	60 ton/hr	# 2		
		Screens=		
Operating Hours	6000 hours/year	360000 tons/year	Annual Throughput	

PM Emissions: (Screening Uncontrolled)

Emission Factor	0.02500 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.025 lbs/ton) * (60.00 ton/hour) * (2 screens) =		3.00 lbs/hr	
	(3.00 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		9.00 TPY	
	with 90% Baghouse Control Applied		0.9 TPY	

PM₁₀ Emissions:

Emission Factor	0.0087 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0087 lbs/ton) * (60.00 ton/hour) * (2 screens) =		1.04 lbs/hr	
	(1.04 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		3.13 TPY	
	with 90% Baghouse Control Applied		0.31 TPY	

PM_{2.5} Emissions:

Emission Factor	0.00348 lbs/ton	[AP-42 Table 11.19.2-2 8/04] (PM _{2.5} /PM ₁₀ =0.4)		
Calculations	(0.00348 lbs/ton) * (60.00 ton/hour) =		0.21 lbs/hr	
	(0.21 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		0.63 TPY	
	with 90% Baghouse Control Applied		0.06 TPY	

Material Sizing Conveyor Transfer Points

Process Rate:	60 ton/hr (4 Conveyor Transfers			
Operating Hours	6000 hours/year	(Conveyor Uncontrolled)		

PM Emissions:

Emission Factor	0.00300 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.003 lbs/ton) * (60.00 ton/hour) * (4 transfers) =		0.72 lbs/hr	
	(0.72 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		2.16 TPY	
	with 99.5% Enclosure Control		0.01	

PM₁₀ Emissions:

Emission Factor	0.0011 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0011 lbs/ton) * (60.00 ton/hour) * (4 transfers)=		0.26 lbs/hr	
	(0.26 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		0.79 TPY	
	with 99.5% Enclosure Control		0.00	

PM_{2.5} Emissions:

Emission Factor	0.00044 lbs/ton	[AP-42 Table 11.19.2-2 8/04] (PM _{2.5} /PM ₁₀ =0.4)		
Calculations	(0.00044 lbs/ton) * (60.00 ton/hour) * (4 transfers) =		0.11 lbs/hr	
	(0.11 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		0.32 TPY	
	with 99% Enclosure Control		0.00	

Material Handling Conveyor Transfer Points

Process Rate:	60 ton/hr (15 Conveyor Transfers per application)
Operating Hours	6000 hours/year (Conveyor Uncontrolled)

PM Emissions:

Emission Factor	0.003 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.003 lbs/ton) * (60.00 ton/hour) * (15 transfers) =		2.70 lbs/hr	
	(2.70 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		8.10 TPY	
	with 90% Enclosure Control		0.81 TPY	

PM₁₀ Emissions:

Emission Factor	0.0011 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.0011 lbs/ton) * (60.00 ton/hour) * (15 transfers) =		0.99 lbs/hr	
	(0.99 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		2.97 TPY	
	with 90% Enclosure Control		0.30 TPY	

PM_{2.5} Emissions:

Emission Factor	0.00044 lbs/ton	[AP-42 Table 11.19.2-2 8/04] (PM _{2.5} /PM ₁₀ =0.4)		
Calculations	(0.00044 lbs/ton) * (60.00 ton/hour) * (15 transfers) =		0.40 lbs/hr	
	(0.40 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		1.19 TPY	
	with 90% Enclosure Control		0.12 TPY	

Other Material Transfers

Process Rate:	60 ton/hr (5 Conveyor Transfers per application)
Operating Hours	6000 hours/year

PM Emissions:

Emission Factor	0.1 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.1 lbs/ton) * (60.00 ton/hour) * (5 transfers) =		30.00 lbs/hr	
	(30.00 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		90.00 TPY	
	with 90% Enclosure Control		9.00 TPY	

PM₁₀ Emissions:

Emission Factor	0.047 lbs/ton	[AP-42 Table 11.19.2-2 8/04]		
Calculations	(0.047 lbs/ton) * (60.00 ton/hour) * (5 transfers) =		14.10 lbs/hr	
	(14.10 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		42.30 TPY	
	with 90% Enclosure Control		4.23 TPY	

PM_{2.5} Emissions:

Emission Factor	0.0072 lbs/ton	[AP-42 Table 11.19.2-2 8/04] (PM _{2.5} /PM ₁₀ =0.4)		
Calculations	(0.0072 lbs/ton) * (60.00 ton/hour) * (5 transfers) =		6.48 lbs/hr	
	(6.48 lbs/hr) * (6000 hrs/yr) * (0.0005 tons/lb) =		19.44 TPY	
	with 90% Enclosure Control		1.94 TPY	

Truck Loading

Process Rate: 60 ton/hr
Operating Hours 6000 hours/year

PM Emissions:

Emission Factor 0.00021 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.00021 \text{ lbs/ton}) * (60.00 \text{ ton/hour}) = 0.01 \text{ lbs/hr}$
 $(0.01 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 0.04 \text{ TPY}$

PM₁₀ Emissions:

Emission Factor 0.0001 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.0001 \text{ lbs/ton}) * (60.00 \text{ ton/hour}) = 0.01 \text{ lbs/hr}$
 $(0.01 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 0.02 \text{ TPY}$

PM_{2.5} Emissions:

Emission Factor 0.000015 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.000015 \text{ lbs/ton}) * (60.00 \text{ ton/hour}) = 0.001 \text{ lbs/hr}$
 $(0.001 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 0.003 \text{ TPY}$

Front End Loader Material Handling

Process Rate: 60 ton/hr 2 Front End Loader (FEL) Transfers
Operating Hours 6000 hours/year

PM Emissions:

Emission Factor 0.024 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.024 \text{ lbs/ton}) * (60.00 \text{ ton/hour} * 2 \text{ FEL Transfers}) = 2.88 \text{ lbs/hr}$
 $(2.88 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 8.64 \text{ TPY}$

PM₁₀ Emissions:

Emission Factor 0.011 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.011 \text{ lbs/ton}) * (60.00 \text{ ton/hour} * 2 \text{ FEL Transfers}) = 1.32 \text{ lbs/hr}$
 $(1.32 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 3.96 \text{ TPY}$

PM_{2.5} Emissions:

Emission Factor 0.0017 lbs/ton [AP-42 Table 11.19.2-2 8/04]
Calculations $(0.0017 \text{ lbs/ton}) * (60.00 \text{ ton/hour} * 2 \text{ FEL Transfers}) = 0.204 \text{ lbs/hr}$
 $(0.204 \text{ lbs/hr}) * (6000 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) = 0.612 \text{ TPY}$

One Diesel Generator

Engine Rating: 685 hp 242 lb fuel/hr
Operating 8760 hrs/yr
Hours:

Particulate Emissions:

PM Emissions:

Emission Factor	0.130 g/HP-hr	Manufacturer		
Calculations	$(0.13 \text{ g/hp-hr}) * (\text{ hp}) * \text{lb}/453.6 \text{ g} =$			0.20 lbs/hr
	$(0.20 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			0.86 TPY

PM₁₀ Emissions:

Emission Factor	0.130 g/HP-hr	Manufacturer		
Calculations	$(0.13 \text{ g/hp-hr}) * (\text{ hp}) * \text{lb}/453.6 \text{ g} =$			0.20 lbs/hr
	$(0.20 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			0.86 TPY

PM_{2.5} Emissions:

Emission Factor	0.130 g/HP-hr	Manufacturer		
Calculations	$(0.13 \text{ g/hp-hr}) * (\text{ hp}) * \text{lb}/453.6 \text{ g} =$			0.20 lbs/hr
	$(0.20 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			0.86 TPY

CO Emissions:

Emission Factor	0.800 g/HP-hr	Manufacturer		
Calculations	$(0.8 \text{ g/hp-hr}) * (685 \text{ hp}) * \text{lb}/453.6 \text{ g} =$			1.21 lbs/hr
	$(1.21 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			5.29 TPY

NO_x Emissions:

Emission Factor	2.720 g/HP-hr	Manufacturer		
Calculations	$(2.72 \text{ g/hp-hr}) * (685 \text{ hp}) * \text{lb}/453.6 \text{ g} =$			4.10 lbs/hr
	$(4.10 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			17.98 TPY

SO₂ Emissions:

Emission Factor	15 lb S/1,000,000 lb fuel	40 CFR 89, Ultra low sulfur diesel concentration		
Calculations	$(15.00 \text{ lb}/10^6 \text{ lb-fuel}) * (242 \text{ lb fuel/hr}) * 64 \text{ lb SO}_2/32 \text{ lb S} =$			0.01 lbs/hr
	$(0.01 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			0.03 TPY

VOC Emissions:

Emission Factor	0.080 g/HP-hr	Manufacturer		
Calculations	$(0.08 \text{ g/hp-hr}) * (685 \text{ hp}) * \text{lb}/453.6 \text{ g} =$			0.12 lbs/hr
	$(0.12 \text{ lbs/hr}) * (8760 \text{ hrs/yr}) * (0.0005 \text{ tons/lb}) =$			0.53 TPY

Unpaved Roadways (Front End Loaders) Fugitives

Emission Factor	$EF = k(s/12)^a * (W/3)^b$ [AP-42 13.2.2.2, 11/06]			
	EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)			
	k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]	
	k, Empirical Constant PM ₁₀ =	1.5	[AP-42 Table 13.2.2-2, 11/06]	
	k, Empirical Constant PM _{2.5} =	0.15	[AP-42 Table 13.2.2-2, 11/06]	
	s, Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]	
	W, Mean Vehicle Weight Loaded (tons) =	25	[Application - Estimate]	
	a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]	
	a, Empirical Constant PM ₁₀ and PM _{2.5} =	0.9	[AP-42 Table 13.2.2-2, 11/06]	
	b, Empirical Constant PM, PM ₁₀ and PM _{2.5} =	0.45	[AP-42 Table 13.2.2-2, 11/06]	
	68 Miles a day		Application	

PM Emissions(uncontrolled): PM

Emission Factor	EF = $4.9 * (7.1/12)^{0.7} * (25/3)^{0.45} =$	8.81	lbs/VMt	
Calculations	(8.81 lbs/VMt) * (68 miles/day) =			599.14 lbs/day
	(599.14 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			109.34 TPY
	50% Control Applied			54.67 TPY

PM₁₀ Emissions(uncontrolled):

Emission Factor	EF = $1.5 * (7.1/12)^{0.9} * (25/3)^{0.45} =$	2.43	lbs/VMt	
Calculations	(2.43 lbs/VMt) * (68 miles/day) =			165.13 lbs/day
	(165.13 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			30.14 TPY
	50% Control Applied			15.07 TPY

PM_{2.5} Emissions(uncontrolled):

Emission Factor	EF = $0.15 * (7.1/12)^{0.9} * (25/3)^{0.45} =$	0.24	lbs/VMt	
Calculations	(0.24 lbs/VMt) * (68 miles/day) =			16.51 lbs/day
	(16.51 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			3.01 TPY
	50% Control Applied			1.51 TPY

Unpaved Roadways (Haul Trucks) Fugitives

Emission Factor	EF = $k(s/12)^a * (W/3)^b$	[AP-42 13.2.2.2, 11/06]		
	EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMt)			
k, Empirical Constant PM	=	4.9	[AP-42 Table 13.2.2-2, 11/06]	
k, Empirical Constant PM ₁₀	=	1.5	[AP-42 Table 13.2.2-2, 11/06]	
k, Empirical Constant PM _{2.5}	=	0.15	[AP-42 Table 13.2.2-2, 11/06]	
s, Surface Material Silt Content (%)	=	7.1	[AP-42 Table 13.2.2-1, 11/06]	
W, Mean Vehicle Weight Loaded (tons)	=	37.5	[Application - Estimate]	
a, Empirical Constant PM	=	0.7	[AP-42 Table 13.2.2-2, 11/06]	
a, Empirical Constant PM ₁₀ and PM _{2.5}	=	0.9	[AP-42 Table 13.2.2-2, 11/06]	
b, Empirical Constant PM, PM ₁₀ and PM _{2.5}	=	0.45	[AP-42 Table 13.2.2-2, 11/06]	
	48 Miles a Day	Application		

PM Emissions(uncontrolled): PM

Emission Factor	EF = $4.9 * (7.1/12)^{0.7} * (25/3)^{0.45} =$	10.57	lbs/VMt	
Calculations	(10.57 lbs/VMt) * (48 miles/day) =			507.58 lbs/day
	(507.58 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			92.63 TPY
	50% Control Applied			46.32 TPY

PM₁₀ Emissions(uncontrolled):

Emission Factor	EF = $1.5 * (7.1/12)^{0.9} * (25/3)^{0.45} =$	2.91	lbs/VMt	
Calculations	(2.91 lbs/VMt) * (48 miles/day) =			139.90 lbs/day
	(139.90 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			25.53 TPY
	50% Control Applied			12.77 TPY

PM_{2.5} Emissions(uncontrolled):

Emission Factor	EF = $0.15 * (7.1/12)^{0.9} * (25/3)^{0.45} =$	0.29	lbs/VMt	
Calculations	(0.29 lbs/VMt) * (48 miles/day) =			13.99 lbs/day
	(13.99 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			2.55 TPY
	50% Control Applied			1.28 TPY

Rotary Dryer

Hours:

Particulate Emissions:

PM Emissions:

PM₁₀ Emissions:

PM_{2.5} Emissions:

CO Emissions:

NO_x Emissions:

SO₂ Emissions:

VOC Emissions:

V. Existing Air Quality

USM's initial location is the home pit and is located at 47.8712 latitude and -104.0605 longitude. The township, range, section description is Township 4 North, Range 11 West in Section 12 in Deer Lodge County, Montana. This location and those areas for which this facility is permitted to operate under MAQP #4834-00 are considered attainment/unclassified for all the National Ambient Air Quality Standards (NAAQS).

VI. Air Quality Impacts

This permit is for a screening facility. MAQP #4834-00 will cover the operation at any location within the State of Montana, excluding those counties that have a Department approved permitting program, areas considered tribal lands, or areas in or within 10 kilometers (km) of certain PM₁₀ nonattainment areas. In the view of the Department, the amount of controlled emissions generated by this facility will not exceed any set ambient standard. .

VII. Ambient Air Impact Analysis

The Department determined that the impact from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard.

VIII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

Analysis Prepared By: Craig Henrikson

Date: November 29, 2012

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, MT 59620
(406) 444-3490

DRAFT ENVIRONMENTAL ASSESSMENT (EA)

Issued To: *U.S. Minerals, Inc.*
 2105 North Winds Drive
 Dyer IN 46311

Montana Air Quality Permit Number: 4834-00

Preliminary Determination Issued: 12/18/2012

Department Decision Issued:

Permit Final:

1. *Legal Description of Site:* U.S. Minerals, Inc. (USM) submitted an application to operate a copper slag screening and drying operation powered by a single diesel-fired generator. Montana Air Quality Permit (MAQP) #4834-00 would apply while operating at any location in Montana, except within those areas having a Department-approved permitting program, those areas considered to be tribal lands, or those areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) nonattainment areas. An addendum to this air quality permit would be required if USM intends to locate in or within 10 km of certain PM₁₀ nonattainment areas. *A Missoula County air quality permit would be required for locations within Missoula County, Montana.*
2. *Description of Project:* The permit application is for the operation of a screening and rotary drying operation with diesel-fired generator with total engine horsepower (hp) up to 685. The diesel-fired generator would be used to provide power to the USM equipment (i.e. screens, conveyors, elevators etc.). Particulates are controlled through the use of a baghouse and process enclosures.
3. *Objectives of Project:* The object of the project would be to produce business and revenue for the company through the sale and use of screened slag for use in the roofing granule and abrasives industries. The issuance of MAQP #4834-00 would allow USM to operate the permitted equipment at various locations throughout Montana, including the proposed initial site location.
4. *Alternatives Considered:* In addition to the proposed action, the Department considered the "no-action" alternative. The "no-action" alternative would deny issuance of the MAQP to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because permitting USM's equipment in a de minimis fashion should facilitate compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A listing of the enforceable permit conditions and a permit analysis, including a Best Available Control Technology (BACT) analysis, is included in this permit action.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and to demonstrate compliance with those requirements and would not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no action alternative” was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats				X		Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture				X		Yes
D	Vegetation Cover, Quantity, and Quality				X		Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources				X		Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts				X		Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

The operation of the slag screening and drying facility would have no impacts upon the terrestrial and aquatic life and habitats in areas where the facility may operate. Although air pollutant deposition would occur in the areas where the equipment would operate, the size and nature of the operation, dispersion characteristics of pollutants, and conditions placed in MAQP #4834-00 would result in no impacts as the site is former industrial and is within a Superfund cleanup site. Therefore, the operation of the equipment would present no impacts as no terrestrial and aquatic life is present in the area of potential operation.

B. Water Quality, Quantity, and Distribution

Although there would be an increase in air emissions in the area where the slag screening and drying facility would operate, there would only be minor impacts on water quality, quantity, and distribution because of the nature, size, operational requirements, and conditions placed in MAQP #4834-00 for the facility. Further, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor. In addition, any accidental spills or leaks from equipment would be required to be handled according to the appropriate environmental regulations in an effort to minimize any potential adverse impact on the immediate and surrounding area. Overall, the operation of the equipment would have minor impacts to water quality, quantity, and distribution in the area of operations.

C. Geology and Soil Quality, Stability, and Moisture

As a result of the operation of the slag screening and drying facility, there would be no impacts to the geology and soil quality, stability, and moisture near the equipment's operational area because of the increased vehicle traffic and deposition of pollutants from the facility. As explained in Section 7.F. of this EA, the facility's size, operational requirements, nature of the operation being located on the existing copper slag pile, and conditions placed in MAQP #4834-00 would minimize the impacts from deposition.

D. Vegetation Cover, Quantity, and Quality

The operation of the screening and drying equipment would result in no impacts to the vegetative cover, quantity, and quality, because the proposed operation would be located on the existing copper slag pile and the area is a former industrial site and located within a Superfund cleanup site. As explained in Section 7.F. of this EA, the Department determined that, due to the nature of the operation, conditions placed in MAQP #4834-00, and dispersion characteristics of the emissions, any impacts from deposition would not be expected. In addition, because the water usage would be limited to use in particulate control (as described in Section 7.B. of this EA) and no presence of soil on the slag pile (as described in Section 7.C. of this EA), corresponding vegetative impacts from water and soil disturbance would not occur.

E. Aesthetics

The slag screening and drying facility would be visible and would create noise in the areas where it would operate. MAQP #4834-00 would include conditions to control emissions (including visible emissions) from the screening and drying equipment and the surrounding work area. The generator would be moderately sized by industrial standards and would be used to power permitted equipment operated by USM. The proposed project site is within a previous industrial area and is located within a Superfund clean-up site and therefore, any aesthetic impact would be minor.

F. Air Quality

Air quality impacts from the operation of the screening and drying facility would be minor because emissions from the screening and drying facility would be relatively small when controls are applied to the equipment. Dispersion and deposition of pollutants would occur from the operation of the screening and drying facility; however, the Department determined that any air quality impacts from the pollutants would be minor due to dispersion characteristics (from factors such as wind speed and wind direction) and conditions placed in MAQP #4834-00.

MAQP #4834-00 would include conditions limiting opacity from the screening and drying facility and would require that reasonable precautions be taken to control emissions from haul roads, access roads, parking lots, or the general work area. In addition, the permit would also limit total emissions from the screening and drying facility and any additional equipment operated at the same site to 250 tons per year or less. Further, because the screening and drying facility has less than 100 tons per year of potential emissions for any pollutant generated, the Department determined that the screening and drying facility is a minor source of emissions as defined under Title V.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify species of special concern that may be present in the proposed areas of operation, the Department contacted the Montana Natural Heritage Program (MNHP) for a review of species of special concern. Two species of concern were identified within the area where the screening and drying facility is proposed. These include Westslope Cutthroat Trout and Bull Trout. Issuance of this permit would increase emissions to the atmosphere near any location proposed for the operation of the screening and drying facility. However, as explained in Section 7.F. of this EA, because of the nature of the screening and drying facility, and conditions placed in MAQP #4834-00, any impacts to unique endangered, fragile, or limited environmental resources from the deposition of pollutants would not be expected given the location of the proposed facility on the existing copper slag pile.

H. Demands on Environmental Resource of Water, Air, and Energy

Water would be used on particulate emissions at equipment transfer points, haul roads, access roads, parking lots, or the general plant property, as necessary, to control dust resulting from indirect use of the screening and drying facility. The generator would consume energy from diesel fuel, a non-renewable resource. Generally, the operations are seasonal and would result in small demands on environmental resources. Therefore, any impacts on the demands of the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

According to correspondence with the Montana State Historic Preservation Office (SHPO), there have been previously recorded sites in the vicinity of the proposed site location. However, given the proposed site is on the existing copper slag pile, no impact to historical or archaeological sites would occur. Therefore, it is unlikely that the project would affect any historic or archaeological site and no resulting impacts.

J. Cumulative and Secondary Impacts

The operation of the screening and drying facility would cause no effects to the physical and biological environment because the site is former industrial land and is within the site of a Superfund clean-up site. However, any operations would have to apply for and receive the appropriate permits in addition to this MAQP prior to operation. The permits would address the environmental impacts associated with the operations at the proposed site.

The screening and drying facility operations would be limited by MAQP #4834-00 to total emissions of 250 tons/year or less from non-fugitive screening and drying facility operations and any other additional equipment used at any given site.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			X			Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity					X	Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The operation of the slag screening and drying facility would not likely alter or disrupt any local lifestyles or communities (social structures and mores) in the area of operation because most of the equipment is currently in place. However, because the equipment has not operated for many years the existing social structures and mores could be affected in a minor way as a result of this permitting action.

B. Cultural Uniqueness and Diversity

The operation of the screening and drying equipment would have no impact on the cultural uniqueness and diversity because the equipment operations would be located at the existing site which is a former industrial area and within a Superfund cleanup site.

C. Local and State Tax Base and Tax Revenue

The proposed operation of the slag screening and drying facility would have a minor affect on local and state tax base and tax revenue. Up to fifteen (15) new jobs would be created as a result of issuing MAQP #4834-00, and revenue created by the operation of the slag drying and screening facility would likely benefit the local economy and continue year-round.

D. Agricultural or Industrial Production

No impact on agricultural or industrial production would occur as the proposed site for the screening and drying facility would be located in a former industrial area and is within a Superfund cleanup site.

E. Human Health

MAQP #4834-00 would incorporate conditions to ensure that the screening and drying facility would be operated in compliance with all applicable rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F. of this EA, the Department determined that any impacts from deposition of pollutants would be minor due to dispersion characteristics and conditions placed in MAQP #4834-00. The air emissions from this facility would be minimized by opacity limitations on the screening and drying facility and the surrounding area of operation.

F. Access to and Quality of Recreational and Wilderness Activities

This plant be located on previously disturbed property, and in a previously used industrial area as well as within a Superfund cleanup site, and therefore does not impact access to recreational and wilderness activities.

G. Quantity and Distribution of Employment

Given the relatively small production capacity of the operation, it is not expected that the activities from the operation of the slag screening and drying facility would significantly affect the quantity and distribution of employment in any given area. Minor increases in an area's employment up to fifteen (15) employees could result as a result of issuing MAQP #4834-00.

H. Distribution of Population

Given the relatively small production capacity of the operation, it is not expected that the activities from the slag screening and drying facility would disrupt the normal population distribution of any given area. No secondary activities are identified to move to the current proposed area as a result of the current project.

I. Demands of Government Services

Government services would be required for acquiring the appropriate permits and ensuring compliance with the permits that are issued; however, the government services required would be minor.

J. Industrial and Commercial Activity

The operation of the slag screening and drying facility would represent only a minor increase in the industrial activity in any given area. No additional industrial or commercial activities are identified from the operation of the slag screening and drying facility but secondary activities could result from products produced by the facility. Therefore, industrial and commercial activity resulting from the current permit action is unknown.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans or goals at any given site that the slag screening and drying facility may be operated at under MAQP #4834-00. The conditions identified in MAQP #4834-00 would apply to operation of the slag screening and drying facility at the proposed initial site as well as any other location in Montana as described in Section 1 of this EA.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary social and economic impacts from this project would be minor because the slag screening and drying facility is considered a small sized operation by industrial standards. New businesses could be drawn to the area and permanent jobs would be created due to the operation of the slag screening and drying facility. Because up to fifteen (15) employees would be hired due to the operation of the slag screening and drying facility, there would be minor economic impacts from new employees. In addition, any social and economic impacts that are created would be minor because of the relatively small size and nature of the operation.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: Because this slag screening and drying facility is relatively small in size and must use reasonable precautions to control emissions, any impacts created would be minor impacts.

Other groups or agencies contacted or which may have overlapping jurisdiction: *Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program*

Individuals or groups contributing to this EA: *Department of Environmental Quality – Air Resources Management Bureau.*

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